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ABSTRACT

This research investigated the relationships among teacher expectancy, student perception, and student self-concept. A sample of 1,598 Taiwanese elementary school children in grades 3-6 were administered a school self-concept scale and a measure of their perceptions of teachers' positive and negative oral feedback in academic and nonacademic domains. Homeroom teachers were asked to identify students for whom they had high or low expectations. Although amounts of all four types of perceived feedback differed significantly across expectancy groups, discriminant analysis indicated that student perceptions of positive and negative academic oral feedback were more heavily weighted in predicting teacher expectancy level. Furthermore, structural equation modeling showed that both positive and negative academic oral feedback were predictive of the three dimensions of school self-concept. The strongest relationship was between positive academic oral feedback and academic self-concept. Two-way ANOVAs evaluating grade and gender effects for oral feedback showed that males perceived more negative oral feedback from teachers than females in all four grades, although there were no significant gender differences on positive academic and nonacademic oral feedback. Regarding the effect of grade on perceived feedback, fourth grade students always perceived more positive and less negative oral feedback than fifth graders. Females' perceptions of negative feedback followed this trend, but differences were not significant across grade. Some suggestions for practitioners are noted. (Contains 22 references.) (Author/SM)

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Relations among teacher expectancies, student perceptions of teacher oral feedback, and student self-concept: An empirical study in Taiwanese elementary schools

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Abstract

The purpose of this research was to investigate the relationships among teacher expectancy, student perception, and student self-concept. A sample of 1598 Taiwanese elementary school children in grades 3 to 6 were administrated a school self-concept scale and a measure of their perceptions of teachers' positive and negative oral feedback in academic and nonacademic domains. Homeroom teachers were asked to identify students for whom they had high or low expectancies.

Although amounts of all four types of perceived feedback differed significantly across expectancy groups, discriminant analysis indicated that student perceptions of positive and negative academic oral feedback were more heavily weighted in predicting teacher expectancy level. Furthermore, structural equation modeling showed that both positive and negative academic oral feedback were predictive of the three dimensions of school self-concept; the strongest relationship was between positive academic oral feedback and academic self-concept.

Two-way ANOVAs evaluating grade and gender effects for oral feedback showed that males perceived more negative oral feedback from teachers than females in all four grades, however there were no significant gender differences on positive academic and nonacademic oral feedback. Regarding the effect of grade on perceived feedback, fourth-grade students always perceived more positive and less negative oral feedback than fifth-grade students; females' perceptions of negative feedback followed this trend but differences were not significant across grade. Some suggestions for practitioners are noted.

Relations among teacher expectancies, student perceptions of teacher oral feedback, and student self-concept: An empirical study in Taiwanese elementary schools

Teacher expectancy can influence dramatically various student attributes, including self-concept and academic performance (Blote, 1995; Brattesani, Weinstein, & Marshall, 1984; Cooper & Good, 1983; Parsons, Kaczala, & Meece, 1982). A critical link in the relationship between teacher expectancy and student characteristics such as self-concept, for example, is how student perceptions of teacher expectations relate to the teacher expectancies themselves. Student perceptions of teacher expectations are presumably influenced by the type of oral feedback they receive from the teacher. In this study, we first evaluate the relationship between teacher expectancy and student perceptions of teachers' oral feedback. We then specify and test a model relating students' perceptions of teachers' oral feedback for academic and nonacademic domains to students' school self-concept. Gender and grade differences on students' perceptions of teachers' oral feedback are also considered.

Teacher expectancy for a student was defined as the teacher's judgment of the student's behaviors based on academic and nonacademic performance in school. Teacher expectations can strongly influence the expectations students have of themselves (Brophy, 1983; Weinstein, 1989). Eccles and Wigfield (1985) found that students who have high expectations of themselves will choose more challenging tasks than those with low expectations and will show greater persistence when faced with difficult tasks. Rosenthal and Jacobson (1968) pointed out that students for whom teachers had high expectations for intellectual development displayed greater progress than those for whom teacher expectations were lower.

Because elementary students typically spend a great deal of time with their teachers, the relationships between students and their teachers may be particularly influential. Blote (1995)

pointed out that the elementary students have more opportunities to interact with their homeroom teacher at school than do high school students. It is therefore likely that the elementary students would have more opportunities to perceive and interpret their homeroom teacher's behavior. In Taiwan, elementary students spend eight hours per day in school, most of which is spent with the homeroom teacher, creating many opportunities for oral interactions with their teachers. An important part of these oral interactions consists of feedback given to students about their academic and nonacademic performance.

Student perception of teacher treatment has been shown to be a critical mediating variable in the relationship between teacher expectancy and student attributes (e.g., Babad, 1990; Blote, 1995; Brophy, 1983; Burnett, 2002; Cooper, 1985). Cooper and Good (1983) demonstrated that students' perceptions of teachers' feedback in the form of praise differed from those of the teachers' perceptions. Weinstein (1985, 1989) has studied extensively the topic of teacher expectancies, finding relationships between expectancies and teacher behavior, as well as affirming students' ability to perceive differential teacher behavior toward students. Blote (1995) described a simple model of the relationship between teacher expectancy and student self-concept. According to Blote's model, teacher expectancy affects teacher behavior, and students then form a perception of this teacher behavior. Student perception of the teacher's expectancies, mediated by teacher behavior, may influence student attributes such as student self-concept.

Purpose of the Study

Our study was conducted in Taiwanese elementary schools. We first explored relationships between teachers' self-reported expectancies for students (based on academic and nonacademic performance) and student perceptions of four types of teachers' oral feedback: positive academic, negative academic, positive nonacademic, and negative nonacademic. A structural model was then evaluated in which these four dimensions of student perceptions

predict academic, nonacademic, and general student self-concept. We also examined whether students' perceptions of teachers' oral feedback differs across gender and grade level (grades 3-6).

Methods

Instruments

Teacher expectancy. For this study, teachers' expectancy ratings of students were based on their observations of a student's overall school performance, including both academic and nonacademic performances and behaviors. Therefore, expectancies were formed based on teachers' experiences and interactions with their students rather than manipulated as an experimental variable; this approach is consistent with that discussed by Blote (1995). Academic performance encompasses test and project grades, homework efforts, and attitudes toward learning. Nonacademic performance includes behaviors such as bringing learning materials, relationships with classmates, and obeying school or class rules. Teachers were asked to nominate from each class at most seven students with the best overall performance, forming the high expectancy group, and at most seven students with the worst overall performance, forming the low expectancy group. Those students not named to either of these groups were in the average expectancy group.

Perceived teachers' oral feedback questionnaire. The perceived teachers' oral feedback questionnaire was created as a measure of students' perceptions of teachers' positive and negative oral feedback about their academic and nonacademic performance (Chang, Chen, Chen, & Jang, 1997). Small discussion groups were conducted separately with students and teachers in two elementary schools in Taiwan to determine the student behaviors for which teachers would give oral feedback most frequently, as well as the types of oral feedback the teacher would give according to these student behaviors. Teachers and students were also asked to complete a self-

report survey addressing these topics. Based on this information, 52 items for the questionnaire were written to reflect four types of oral feedback: positive academic, negative academic, positive nonacademic, and negative nonacademic. Students responded to the items on this questionnaire using a 4-point scale to rate the perceived frequency of particular types of feedback given by their current teacher (4=often; 3=sometimes; 2=seldom; 1=never). Scale scores were computed by averaging the responses within each type of feedback.

School self-concept. Considering Taiwan's elementary school context, the school self-concept scale was developed (Chang, Chen, Chen, & Jang, 1997). The school self-concept scale contains 30 items and 3 subscales: general self-concept, academic self-concept, and non-academic self-concept. Students responded to the items on this questionnaire using a 4-point scale to rate the extent of their agreement (4=strongly agree; 3=agree; 2=disagree; 1=strongly disagree). After reverse scoring appropriate items, high scores indicated more positive self-concept. Scale scores were computed by averaging the responses within each self-concept factor.

Participants and Procedures

Participants consisted of 1612 elementary school students ranging from grade 3 to grade 6. The stratified sampling method was used to sample students by classroom in ten schools from four cities in Taiwan: Taipei (25.5% of students in sample), Taichung (26.6%), Tainan (18.3%), and Hwalan (29.6%). The schools sampled from Taipei and Taichung are urban schools, while those from Hwalan are suburban and those from Tainan are in rural settings. The grade composition of the sample was 20.3%, 25.6%, 27.4%, and 26.8% for third through sixth grade, respectively. The sample was 51.7% male and 48.3% female.

Data were collected by the authors of the perception and self-concept instruments following a standard procedure for administration of the measures (Chang, Chen, Chen, & Jang, 1997). Informed consent was obtained from the school principals and teachers, and participants were

assured anonymity. Instructions were read aloud and students were first asked to report their gender and grade in school. On the perception and self-concept instruments, they were instructed to mark the response category for each statement that best describes the way they were feeling and thinking. There were no time limits on either the perception or self-concept measure. Simultaneously, homeroom teachers were asked to rate their own students as having good, average, or poor overall performance according to the criteria described previously.

Analysis

Discriminant analysis was conducted to explore how well teachers' expectancy levels for their students were predicted from student perceptions of teacher feedback for academic and nonacademic domains. This analysis was useful in determining the types of oral feedback from teachers that most strongly reflect the teachers' expectancies. One-way ANOVAs were conducted to evaluate mean differences in perceptions of oral feedback across expectancy groups. Additionally, two-way univariate ANOVAs were used to evaluate whether student perceptions of teacher oral feedback for academic and nonacademic domains differ as a function of gender and grade level.

Following confirmatory factor analysis of the self-concept model, a structural equation model was estimated to evaluate the relationships between the four domains of perceived teacher feedback and the three school self-concept factors. Structural equation modeling (SEM) is a model estimation and testing procedure used to assess the fit of the data to a hypothesized model that may include latent variables. Path coefficients suggested which of the four domains of perceived teacher feedback are most strongly associated with each of the school self-concept factors.

Results

After excluding 14 students with incomplete responses, data from 1598 participants were

analyzed.

Teacher Expectancy and Oral Feedback

Following the teacher-nomination approach for rating teachers' expectancies for their students, 19.6% were in the highest expectancy group and 16.8% were in the lowest group, while 63.6% were in the average expectancy group. However, teachers had significantly higher expectancies for females, with 26.0% of females and 13.7% of males being in the highest expectancy group ($\chi^2(2) = 122.72$, $p < .01$).

Discriminant analysis. Discriminant analysis was used to explore whether student perceptions of teachers' positive or negative oral-feedback for academic and nonacademic domains could predict teachers' expectancy levels. The Wilks' s lambda was statistically significant, Ë= .87, ÷^{2} (8, N = 1598) = 221.05, $p < .01$, indicating that student perceptions of the four types of teachers' oral feedback differentiated among students of the three levels of teachers' expectancy. The residual Wilks' s lambda was also significant, Ë= .99, ÷^{2} (3, N = 1598) = 22.99, $p < .01$, indicating that the feedback variables differentiated among the expectancy levels after partialling out the effects of the first discriminant function. Although both are statistically significant, we focus our attention on explaining the first function due to its dominant effect size and greater interpretability. Approximately 12% of the variability of the scores on the first discriminant function was accounted for by the feedback variables, while only 1% of the variability of the scores of the second discriminant function was explained.

Table 1 shows the within-group correlations between the predictors and the discriminant functions (structure coefficients) as well as the standardized coefficients. The first function separated the three expectancy groups sequentially, with low expectancy students scoring highest on the first discriminant function followed by average and high expectancy students. This was primarily an academic feedback function; the largest standardized weights were for positive and

negative academic feedback and the largest correlation with this function was observed for negative academic feedback. Given the standardized coefficients shown in Table 1 and the means reported in Table 2, we see that students in the low expectancy group scored high on this function because they perceived a lot of negative academic feedback and very little positive academic feedback. In contrast, students in the high expectancy group scored low on this function because they perceived very little negative academic feedback and a lot of positive academic feedback.

Univariate ANOVAs. One-way ANOVAs were conducted on the four teacher feedback variables to further assess differences in perceived feedback across the expectancy groups. As shown in Table 2, results indicated that students' perceived frequencies of all four types of oral feedback from teachers differed significantly across expectation groups, with teachers' expectation level accounting for more of the variance in negative feedback than in positive feedback. Students in lower expectancy groups tended to perceive more negative and less positive oral feedback on both academic and nonacademic issues than students in higher expectancy groups. Pairwise comparisons were then conducted for each measure using the least significant difference (LSD) approach to control for Type I error. All pairwise comparisons between expectancy levels were statistically significant except the difference between means across the average and low expectancy groups for positive academic feedback.

Relating Oral Feedback to School Self-Concept

Confirmatory factor analysis of school self-concept scale. The factor structure of the school self-concept scale was estimated prior to evaluating the structural model relating oral feedback to school self-concept. As shown in the goodness-of-fit indices reported in Table 3, the three-factor model for school self-concept did not fit the data satisfactorily. All indices suggested poor fit except the RMSEA, which indicated mediocre fit.

Further examination of the estimated model revealed lower standardized factor loadings and

R^2 indices for self-concept items that were negatively worded. Other researchers have observed that negatively worded items tend to be strongly related with one another even across factors (e.g., Cordery & Sevastors, 1993; Marsh, 1986, 1996; Schmitt & Stults, 1985). Marsh (1996) identified method effects associated with negatively worded items for a measure of global self-esteem. We estimated a second CFA model for school self-concept that included a negative item method factor, on which all negatively worded items were allowed to load, in addition to the three self-concept factors. According to the goodness-of-fit indices, shown in Table 3, the four-factor model fit the data much better than the three-factor model. The NNFI and CFI were closer to .90, indicating marginal fit, and the SRMR and RMSEA were below .05, indicating good fit to the data.

Structural model relating oral feedback to school self-concept. Structural equation modeling (SEM) was used to explore the relationship between the students' perceptions of oral feedback from teachers and their self-concept. The hypothesized model, shown in Figure 1, specified that the four types of perceived oral feedback were related to the students' general, academic, and nonacademic self-concept (the negative item method factor was also retained for this model). As expected, several paths relating feedback to self-concept showed weak, non-significant relations and were omitted from the next model. These included paths from positive nonacademic and negative nonacademic feedback to general self-concept, from negative nonacademic feedback to academic self-concept, and positive nonacademic oral feedback to nonacademic self-concept, as well as non-significant correlations between positive academic and negative academic feedback and between positive nonacademic and negative academic feedback. Model fit remained essentially the same when these paths were removed, Ä÷^{2} (6) = 6.02, $p > .05$. Goodness-of-fit indices for both models are reported in Table 4. The RMSEA indicates good model fit, however other indices again suggest the fit is marginal.

The final structural model is shown in Figure 2 with standardized parameter estimates. All paths were significant at the .05 level. Both positive and negative oral feedback for the academic domain were related to all three dimensions of self-concept, however positive academic feedback was more strongly related to each of these outcomes than negative academic feedback. The strongest path was for the relationship between positive academic oral feedback and academic self-concept (ë = .76). Additionally, weak but significant relationships were observed between positive nonacademic feedback and academic self-concept (ë = .10), as well as between negative nonacademic feedback and nonacademic self-concept (ë = .11).

Gender and Grade Effects on Student Perceptions of Oral Feedback

Two-way ANOVAs were conducted to explore the effects of gender and grade, as well as their interaction, on students' perceived teacher oral feedback. The grade factor had four levels, including grades 3-6. The 2 x 4 ANOVAs for the positive academic and nonacademic domains of teacher oral feedback indicated that there were no significant grade-by-gender interactions or gender main effects. Statistically significant main effects for grade were observed, but effect sizes were small (see Table 5). Follow-up comparisons for adjacent grades showed that fourth-grade students perceived more positive academic and nonacademic oral feedback than fifth-grade students. Differences between third- and fourth-grade students and between fifth- and sixth-grade students for positive feedback were small and not significant.

Regarding perceptions of negative feedback for academic and nonacademic domains, significant grade-by-gender interactions were observed as well as significant main effects for grade and gender. Gender within grade and grade within gender simple main effects were examined for negative academic and nonacademic feedback due to the observed interactions.

In gender within grade tests, differences between males and females for each of the four

grades were statistically significant ($p<.05/4$) for negative academic and nonacademic oral feedback. For all comparisons, males perceived significantly more negative oral feedback than females. In grade within gender tests, there were significant differences across the four grades for males ($p<.05/2$) for both types of negative feedback, but there were no significant differences across the four grades for females. Follow-up tests were conducted to evaluate the three adjacent-grade pairwise differences for males; fifth-grade male students perceived significantly more negative oral feedback from teachers than did fourth-grade male students ($p<.025/3$).

The means of the perceived oral feedback for male and female students across the four grade groups are depicted graphically in Figure 2. We note that differences in perceived oral feedback from teachers were observed for all outcomes between fourth- and fifth-grade students. Fifth-grade students perceived less positive and more negative oral feedback from teachers fourth-grade students.

Discussion

As hypothesized, students for whom teachers held high performance expectancies tended to perceive less negative and more positive oral feedback than those for whom teachers held low performance expectancies. This observation held true for both academic and nonacademic feedback. Based on the discriminant analysis, positive and negative academic feedback were more influential in predicting teacher expectancy than nonacademic feedback. However, univariate ANOVAs, which ignore correlations among the four types of feedback, showed greater effect sizes for negative academic and nonacademic feedback than for positive feedback. It therefore seems that academic feedback in both positive and negative forms is particularly reflective of teacher expectancy.

Other researchers have found associations between expectancy or achievement and feedback specifically in the form of criticism. Teachers have reported more frequent use of

criticism toward students for whom they have low expectations (Cooper & Good, 1983), and this finding has been supported in classroom observation studies (Brophy, 1983; Brophy & Good, 1974). Blote (1995) found that the Dutch students perceived their teachers to give low-achievers more criticism. Students, teachers, and independent observers alike perceive that teachers give feedback differentially according to teachers' expectancies for students.

The impact of teachers' differential oral feedback on student attributes is complex and most likely cumulative in nature. We explored the relation between student perceptions of teachers' oral feedback and student self-concept. The structural model indicated that both positive and negative academic feedback were related to academic, nonacademic, and general self-concept, with the strongest relationship indicating that students perceiving more positive academic feedback tended to have higher academic self-concept. Assuming feedback to be reflective of teachers' expectations, Blote's (1995) result was consistent with our findings. He found that students who perceived themselves to be treated by their teachers as high-achievers had higher school self-concept than those who perceived themselves to be treated as low-achievers. Similarly, using a different but related outcome, Burnett (1996) found that children who perceived that significant others talked positively to them appeared to have more positive and less negative self-talk than those who perceived that others talked more negatively to them.

Regarding gender and grade effects on perceptions of feedback, our results showed that male students perceived more negative academic and nonacademic oral feedback from teachers than female students across four grades, but there was no significant difference across males and females on positive teacher oral feedback. A rather consistent pattern of differences in perceived feedback was observed across grade levels, with fifth-grade students perceiving less positive feedback than fourth-grade students. Fifth-grade male students also perceived more negative feedback than fourth-grade male students, but there were no significant differences across the

grades for female students – this was the source of a small grade-by-gender interaction effect. Interestingly, Taiwanese elementary students in our sample had the same teacher for grades 3-4 and then changed to a different teacher for grades 4-5. The feedback pattern observed therefore suggests that upper-elementary teachers give feedback that is perceived by students as less positive and more negative than middle-elementary teachers. It is unclear from these data why this trend is observed. Perhaps teachers at the upper-elementary level are in fact giving feedback differently or that students become more sensitive to different types of feedback as they mature.

Teacher expectancies can become a self-fulfilling prophecy for student self-concept and other characteristics. It is therefore vital for teachers to be aware of the importance of having high expectations for the progress of all students. Because student perceptions of teachers' oral feedback are related to teacher expectancies, we hope results of this study will encourage both practicing teachers and trainers of teachers to stress both the need to have high expectations for all students and to be actively aware of how they are using oral feedback. The strong positive relationship between positive academic feedback and the self-concept domains, along with the inverse effects negative feedback produces, warrants more attention given in teacher education programs to strategies for framing criticism in a positive tone.

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Table 1

Correlations and Standardized Coefficients of Perceived Teacher Feedback Variables with the Two Discriminant Functions

	Correlation coefficients with discriminant functions		Standardized coefficients for discriminant functions	
Oral feedback measures	Function 1	Function 2	Function 1	Function 2
Positive Academic	-.47	.74	-.74	1.42
Positive Nonacademic	-.38	.42	.19	-.89
Negative Academic	.83	.46	.68	-.10
Negative Nonacademic	.70	.63	.24	.59

Table 2

Results of one-way ANOVAs on four types of perceived feedback among expectancy levels

Expectancy levels	*M*	*SD*	Good	Average
Positive-academic domain $F(2,1595) = 29.59,\ p < .01,\ \eta^2 = .04$				
Good	2.58	.04		
Average	2.27	.02	.22 to .39 *	
Poor	2.19	.04	.28 to .51 *	-.01 to .18
Positive-nonacademic domain $F(2,1595) = 16.95,\ p < .01,\ \eta^2 = .02$				
Good	2.53	.04		
Average	2.29	.02	.14 to .34 *	
Poor	2.18	.05	.23 to .48 *	.01 to .22 *
Negative-academic domain $F(2,1595) = 74.43,\ p < .01,\ \eta^2 = .09$				
Good	1.35	.03		
Average	1.51	.01	-.21 to -.10 *	
Poor	1.81	.03	-.52 to -.38 *	-.36 to -.24 *
Negative-nonacademic domain $F(2,1595) = 56.64,\ p < .01,\ \eta^2 = .07$				
Good	1.42	.03		
Average	1.54	.02	-.19 to -.05 *	
Poor	1.88	.03	-.54 to -.37 *	-.41 to -.26 *

Note: An asterisk indicates that the 95% confidence interval does not contain zero, and therefore the difference in means is significant at the .05 level using the LSD approach.

Table 3

Goodness-of-fit indices for the three-factor model and four-factor model (with a negative item method factor) for the school self-concept scale

Factor Model	$\div^2$	*df*	NNFI	CFI	SRMR	RMSEA	90%CI of RMSEA
Three-factor model	3288.05	402	.67	.70	.072	.067	.065-.069
Four-factor model	1721.46	391	.85	.86	.042	.046	.044-.048

Note. *df* = degree of freedom; NNFI = non-normed fit index; CFI = comparable fit index; SRMR = standardized root mean squared residual; RMSEA = root mean-square error of approximation.

Table 4

Goodness-of-fit indices for structural equation model relating students' perceptions of teachers' oral feedback to students' school self-concept

Model	$\div^2$	*df*	NFI	CFI	SRMR	RMSEA	90%CI of RMSEA
Hypothetical model	2403.83	499	.86	.88	.055	.049	.047-.051
Final model	2409.85	505	.86	.88	.055	.049	.047-.051

Table 5

Results of two-way ANOVAs on four types of teacher oral feedback across grade and gender

Source	*F*	*df*	*p*	Partial η^2
Positive-academic domain				
Grade	5.82	3, 1590	< .01	.011
Gender	2.58	1, 1590	.11	.002
Grade *Gender	1.30	3, 1590	.27	.002
Positive-nonacademic domain				
Grade	3.85	3, 1590	< .01	.007
Gender	3.64	1, 1590	.06	.002
Grade *Gender	1.69	3, 1590	.17	.003
Negative-academic domain				
Grade	8.73	3, 1590	< .01	.016
Gender	107.27	1, 1590	< .01	.063
Grade *Gender	3.53	3, 1590	< .05	.007
Negative-nonacademic domain				
Grade	9.30	3, 1590	< .01	.017
Gender	120.18	1, 1590	< .01	.070
Grade *Gender	3.38	3, 1590	< .05	.006

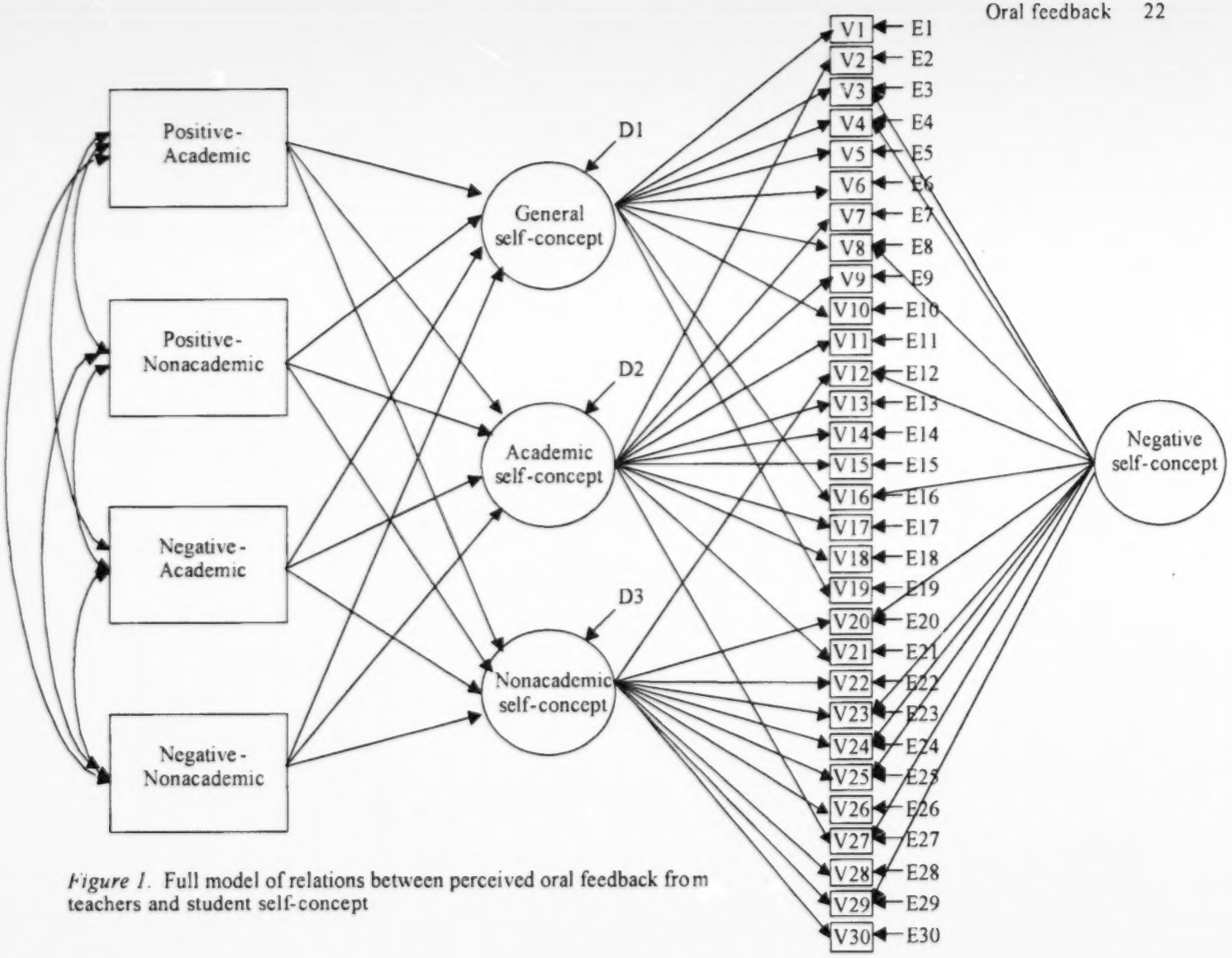

Figure 1. Full model of relations between perceived oral feedback from teachers and student self-concept

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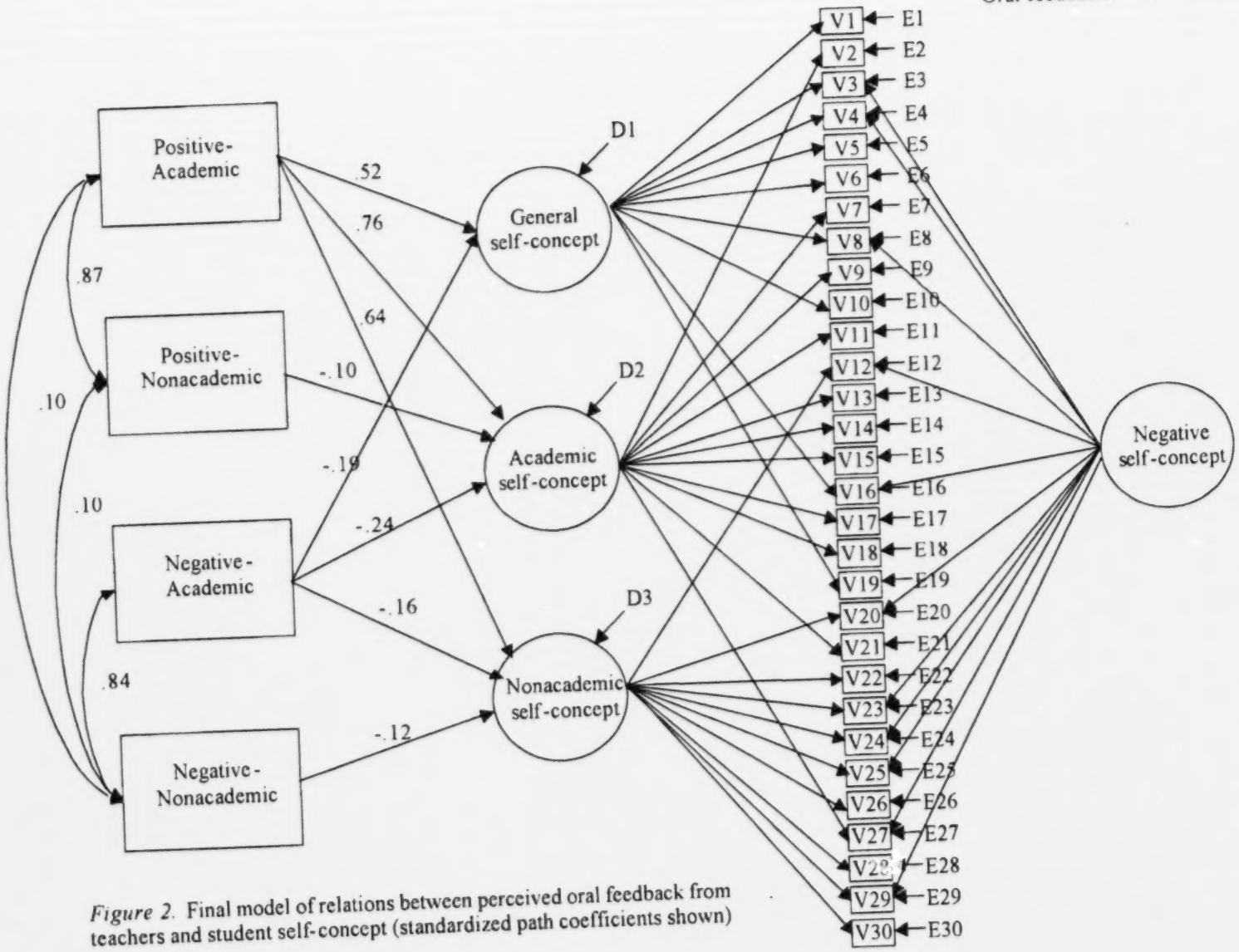

Figure 2. Final model of relations between perceived oral feedback from teachers and student self-concept (standardized path coefficients shown)

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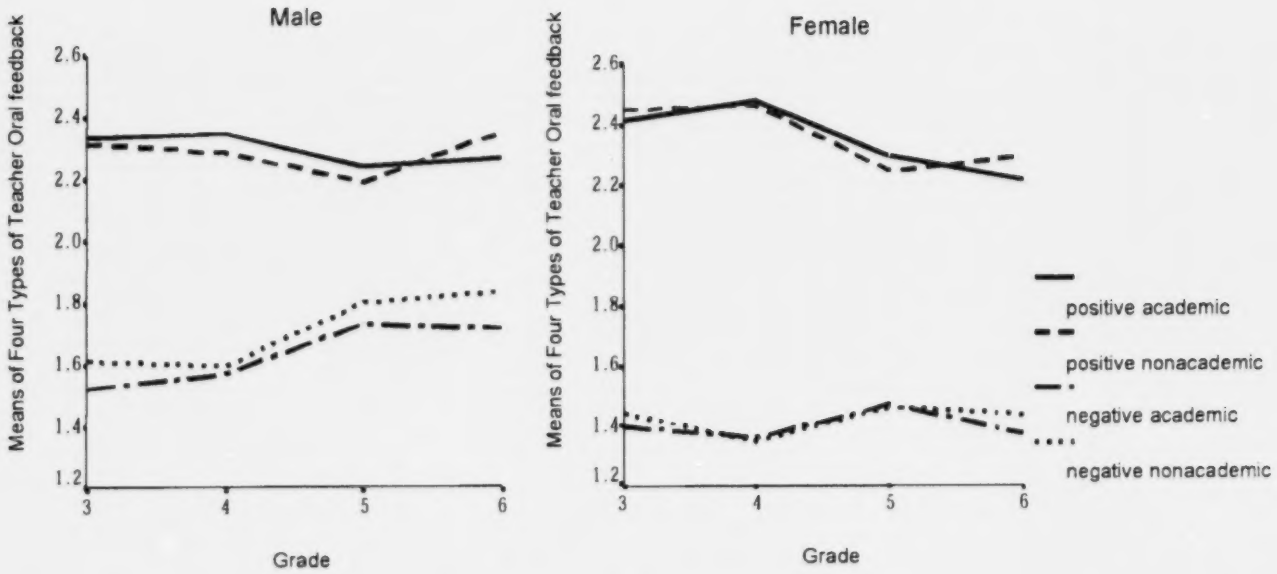

Figure3. Means of the male and female students on four kinds of perceived teacher oral feedback across four grades

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